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The technique has not been lost, for several old men know how they are made.

Food Grinding Stone.—These small stones are used to grind up seeds or nuts gathered by the women and to break mussel shells. They are three or four inches in length, the same in width, and about two inches in thickness. A rock of the proper shape is used and no artificial shaping is done. However, there is a socializing agency at work, in the sense that a round rock flattened on the two opposite sides is preferred and, further, the grinding gradually works the center into a cavity; such a stone has now assumed value and is sought for by a woman in preference to a new stone. The depression is sometimes an inch and a half deep. The stone weighs about a pound and a half normally, but varies from one-half to two and a quarter pounds.

A larger-sized grinding stone also used by the native women is five inches by three inches and weighs about four pounds. It is also flattened on two sides.

The upper grinding stone, or grinder, is usually egg-shaped and is nothing more than an untreated smooth water stone. It has a diameter of about one and one-half inches and weighs from one-eighth to a quarter of a pound.

Camp Wells.—Two types of wells are dug during the dry season. The first is made more or less unconsciously by each person's excavating a small amount of earth from the bottom of a shallow water hole and continuing this process as the water dries up in the latter part of the season. The second variety is purposefully dug where water is known to be. It may be one or two feet in diameter or large enough to allow a man to get down in it to fill his paper-bark basin. Wells of this type sometimes reach a depth of four or five feet. Associated with an artificially constructed well is usually found the long-handled paper-bark container, made by attaching a long stick to an ordinary container with fiber string.

Bridges.—The Murngin often construct rude bridges by placing one to three tree trunks over the smaller streams about the camp.

7. Articles Used in Ceremonies

Feather Headdresses.—The chief materials used in making feather headdresses are resin, beeswax, fiber string, feathers of various birds, leg bones of birds, and wooden or sting-ray prongs. The feathers are hafted to the wooden, bone, or sting-ray pins with ironwood resin. White and black cockatoo tail feathers, the crest of the sulphur-crested cockatoo, emu, jabiru, egret, heron, native companion, goose, and duck feathers are the chief ones used, but feathers of other birds are also utilized.

The pin of the Gunabibi type of headdress is four to six inches long, and usually incised and ruddled if of wood. Sometimes the pin is made from the leg bone of a bird. The resin or beeswax hafting is in the shape

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287 of a cone and is about one and a half to four inches long. It flares out at
292 the feather end, where it has a diameter of about three inches. The hafting material is always painted.

The diameter of the bunch of feathers has two norms, according to the species of birds' feathers used. The first norm ranges around fourteen to sixteen inches, and the second from twenty-two to twenty-six inches. The feathers of the former are emu, black and white cockatoo, black goose, native companion, ibis, egret, jabiru and heron. The latter is always composed of emu tail feathers. Sometimes, instead of being hafted to a pin, the feathers are attached to a loop of string large enough to go around the wearer's head and allow the headdress to hang down the back of his neck and body. The pin type is used in the Gunabibi ceremony, both for making the "head of Yermerlindi," the Great Father Snake, and for the male dancers. The latter wear the feathers attached to the peak of a "dunce cap."

The kurt kurt type of headdress has the same general shape as the Gunabibi type, except that the feathers are spread out fanwise, and the beeswax, which is usually used instead of resin, is flattened instead of
[237] conical. The pin is usually a sting-ray prong, since the barb on this adheres to the wearer's hair more easily than wood or bone, but sticks and bones are sometimes used. The pin is about one to two inches long, the wax about three-quarters of an inch in length. The feather part of the headdress has two norms, one of which is eight inches and the other twelve. The smaller one is composed of crests of the sulphur-crested cockatoo, the twelve-inch one from the wings or tail of an emu. The kurt kurt is worn in such a manner that the fanlike feathers form a brim resembling that of a modern cap or eye shade.

287 The feather fan is made the same way as the kurt kurt headdress except
293 that stiff wing feathers of the jabiru or black goose are used instead of the softer feathers of the kurt kurt. A fan is used when making a fire or as a fly swatter. Often the lower wings are cut from the carcass of the jabiru or black goose and used as fans without further treatment.

778 *Rangas (Totemic Emblems).*—Technically the totemic emblems divide into two main classes. The fundamental structure of each is governed by the materials of which it is made. The first type is the wrapped paperbark form, and the second the carved wooden type. An occasional third type is the stone ranga. Each may have additions to its main structure, but basically there is no variation. Still another type of ranga is formed when mythical paintings are placed on an article of the material culture which is the totem of the group (stone axe, bark boat, et cetera).

Designs are painted on all rangas.[5]

[5] The designs used and their meanings will not be discussed here, since we are considering only the technological processes.

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765 [532] A foot below the "eyes" a band a half-inch wide is incised around the cylinder to represent the cicatrice on a native man's or woman's body.

The bones of the dead after exhumation are placed inside the coffin, a hole is dug a foot or so in the ground, and the log placed upright in the hole.

764 [531] *Grave Posts.*—A tree is felled and a log of the appropriate length cut from it. The post may be uncarved or a series of incisions may be made at the top of it to give it the appearance of a carved "head" with one or more necks.

The grave posts are placed over the grave of the dead, or they may be erected in the camp of a mourner to express his feeling of sorrow for the loss of his relation.

Measurements:

Length: adult, four to five feet; child, three and one-half feet.

Diameter: three to six inches.

765 [531] *Bark Coffin.*—The inner bark of a stringy-bark tree is soaked with water and heated over a fire, then formed into a cylinder with the inside of the bark turned out. It is stuffed with grass to keep it in shape and prevent it from splitting. The bones are placed in it and its two edges sewn together with pandanus fiber and a bone awl. The whole surface is covered with red ocher and painted with the totemic design of the deceased. The coffin is two feet long and four or five inches in diameter.

778 *Plank Ranga.*—Floating planks brought in on the tide, possibly from New Guinea, are of special totemic significance, and some of them are made into rangas by painting a design on them. The boards of a modern European box are now sometimes used in the same manner.

292 287 *Bark Belts.*—A strip of stringy bark about two inches in width, with a circumference great enough to reach about the body of a man, is soaked in water and held over a fire to make it pliable and to smooth its surface. It is then bent into its permanent shape and tied around the wearer. The ends are tied with fiber string and the belt is held in place by knotting the strings across the abdomen of the wearer. The belts are painted and used in ceremonies.

765 *Mourning Mast.*—The mast is supposed to represent the one used by the Malay in their sailing vessels when they visited southern Arafura waters.

The mast is made from a long eucalyptus sapling and is about fourteen and a half feet high and three inches in diameter. The tree is barked first and then cut to leave a protruding oblong band around the circumference a third of the way from the top. The band is decorated with the totemic designs of the deceased. Fiber strings are tied to the top of the post and represent mast ropes.

[531]

796 *Barnumbir Stick.*—A stick about the length of a spear is cut with a diameter of three-quarters of an inch and is sharpened at one end. It is